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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,639	12/01/2005	Yong Chang	678-2028 (P11823)	1507
66547 7590 08/21/2008 THE FARRELL LAW FIRM, P.C. 333 EARLE OVINGTON BOULEVARD SUITE 701 UNIONDALE, NY 11553				
EXAMINER				
BARON, HENRY				
ART UNIT		PAPER NUMBER		
2616				
MAIL DATE		DELIVERY MODE		
08/21/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,639

Applicant(s)

CHANG ET AL.

Examiner

HENRY BARON

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 5/7/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

METHOD AND SYSTEM FOR MULTIPLEXING AND TRANSMITTING SIGNALING MESSAGE AND SUPPLEMENTARY DATA IN A MOBILE COMMUNICATION SYSTEM

Response to Arguments/Remarks

1. Claims 1 – 26 are pending in the application with claim 5 amended.
2. Applicant's arguments filed 05/07/2008 have been fully considered but they are not persuasive.
3. In regards to claim 1, 9, 14, and 19, Applicant argues that the 35 U.S.C. § 103(a) rejection over Hameleers in view of Cao was improper as neither of the cited references teaches of checking whether or not there is a signaling message and/or supplementary data to be transmitted to the mobile station by the base station controller while the base station controller is transmitting/receiving the voice signal. The Applicant, in the remarks, appears to concede that Cao teaches of checking whether or not there is a signaling message to be transmitted.
4. Examiner replies that the in the broadest interpretation of the claim, the conjunction 'and/or' (for 'signaling message and/or supplementary data') can be interpreted as 'and' or 'or'. In the latter case, Applicant appears to concede that Cao teaches of checking whether or not there is a signaling message to be transmitted. In the former case, a signaling message can be interpreted to be a supplemental message to a voice message.
5. Applicant argues, with respect to claim 14, which the Examiner has failed to address the feature of '...reducing a transmission rate of the voice data when the base station controller requests transmission-rate reduction of the voice signal', which Applicant asserts is not disclosed in either Hameleers or Cao.
6. Examiner replies that in the cited figure and paragraphs i.e. Cao Figure 2 and paragraph 2: [0010], Cato teaches of reducing a transmission rate of the voice data when the base station controller requests transmission-rate reduction of the voice signal where after a test determines the priority of the message, i.e. a request for transmission-rate reduction of the voice signal, and the priority is high, then

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the signaling message completely overrides any voice messages i.e. voice signal reduction and simply is sent as a series of full rate signal only frames until the full signaling message has been sent.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamelcers, et al (U.S. Patent 6760325), hereafter Hamelcers, in view of Cao et al (U.S. Patent Application 20040141475) hereafter Cao.

9. In consideration of claim 1, Hamelcers teaches a method for multiplexing and transmitting a signaling message and/or supplementary data with a voice signal to be transmitted to a mobile station in a mobile communication system which includes a media gateway and a base station controller, the media gateway including a trans-coder for converting an analog voice signal and a coded digital voice signal into each other, the base station controller transmitting/receiving a digital voice signal to/from the media gateway, (Figure 1 3: [0061] read .. on the second layer 4, the base transceiver station is connected by means of a direct connection .. to a media gateway .. The base transceiver station, therefore, comprises the functionality and protocol for sending and receiving call and payload information from or to the media gateway via the direct protocol connection. Further, in order to serve the device control protocol connection between the base transceiver station and the base station controller, control protocol software is implemented on both the base transceiver station and the base station controller on the basis of DCP (Device Control Protocol), .. [t]he media gateway substantially provides a payload conversion between the packet switched Global System for Mobile telecommunication and the GSTN network, e.g. a packet switched protocol based network or circuit switched protocol based network. The media gateway of the

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interface .. comprises devices such as transcoders, modems, a network access server etc.) the method comprising the steps of transmitting information of the voice signal and a transmission rate of a voice signal, which are transmitted from the mobile station, from the base station controller to the media gateway; (6: [0048]+ read [i]n the next step "CreaCon", the mobile services switching centre sends a create connection request via the MSC device control protocol connection that .. is supported by the device control protocol (DCP), to the media gateway of the interface means. The create connection request from the mobile services switching centre includes a through-connection indicator that indicates a backward through-connection, the BTS address information, a GSM bearer capability i.e. transmitting information of the voice signal and a selected signaling information field i.e. transmission rate of a voice signal.) transmitting information of a voice signal and a transmission rate of the voice signal, which are transmitted from a called party, from the media gateway to the base station controller (6: [0058] read [a]fter receiving the create connection request from the mobile services switching centre (MSC), in step 8. "CreaConAck", the media gateway (MG) reserves the applicable or corresponding resources for the create connection request and maps the call identification in a MG-MSC internal connection identification. The MG then generates a create connection acknowledge information to be sent back to the mobile services switching centre via the MSC device control protocol connection .. i.e. transmitting information of a voice signal and a transmission rate of the voice signal, which are transmitted from a called party, from the media gateway to the base station controller).

10. However Hameleers does not disclose checking whether or not there is a signaling message and/or supplementary data to be transmitted to the mobile station by the base station controller while the base station controller is transmitting/receiving the voice signal, and multiplexing and transmitting the signaling message and/or the supplementary data with the voice signal to the mobile station when there is the signaling message and/or the supplementary data to be transmitted.

11. Coa teaches checking whether or not there is a signaling message and/or supplementary data to be transmitted to the mobile station by the base station controller while the base station controller is transmitting/receiving the voice signal, and multiplexing and transmitting the signaling message and/or the supplementary data with the voice signal to the mobile station when there is the signaling message and/or the supplementary data to be transmitted. (Figure 1 and 1: [0011] read .. a block diagram illustrating the transmission of combined signaling and voice messages to a mobile station. A signal source (1) finds it necessary to transmit a signaling message to a mobile station).

12. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the voice/signaling message multiplexing teachings of Hamelcers with the dim and burst teachings of Coa.

13. In this manner signaling data can be transmitted to a mobile station together with, depending on priority, with digital voice data, while maintaining QoS for the customers.

14. Regarding claims 2 – 3, 14, and 20 – 21, Hamelcers teaches of a method for multiplexing and transmitting a signaling message and/or supplementary data with a voice signal to be transmitted to a mobile station in a mobile communication system, but does not disclose when the transmission rate of the voice signal transmitted from the media gateway to the base station controller is not reduced during a predetermined period of time, inserting the signaling message and/or the supplementary data instead of the voice signal to be transmitted into a transmission section for the voice signal and transmitting the signaling message and/or the supplementary data to the mobile station or wherein the signaling message and/or the supplementary data transmitted instead of the voice signal to the mobile station are transmitted at a full rate.

15. Coa teaches when the transmission rate of the voice signal transmitted from the media gateway to the base station controller is not reduced during a predetermined period of time, inserting the signaling message and/or the supplementary data instead of the voice signal to be transmitted into a transmission

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section for the voice signal and transmitting the signaling message and/or the supplementary data to the mobile station and or where the signaling message and/or the supplementary data transmitted instead of the voice signal to the mobile station are transmitted at a full rate. (Figure 2; 2: [0012] read [i]n the quiescent state of the multiplexer, the multiplexer is waiting for a signal, i.e., a signaling message. If no signaling message is present, the multiplexer simply transmits the voice message. The multiplexer waits for a signaling message (action block 201). At some point the multiplexer will recognize a request to send forward a signaling message (action block 203). Test 205 determines the priority of the message. If the priority of the message is high, then action block 207 is entered. In action block 207, the signaling message completely overrides any voice messages and simply is sent as a series of full rate signal only frames. These signal only frames are sent until the full signaling message has been sent. Thereafter, action block 209 is entered and P frames must elapse before any further signaling messages are transmitted i.e. the transmission rate of the voice signal transmitted from the media gateway to the base station controller is not reduced during a predetermined period of time.)

16. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the voice/signaling message multiplexing teachings of Hamcleers with the delayed blank and burst teachings of Coa.

17. In this manner if priority signaling data must be transmitted to a mobile station, this can occur in an expedient manner. The reason for waiting P frames is to reduce the interference with the voice message by allowing P frames of voice to go through unhampered between messages. This is only required if M frames of blank and burst (signal data only) had been encountered in sending the signaling message or if a high priority signaling message had been transmitted

18. With regards to claims 4 – 5, 9 – 10, 15 and 22 – 23, Hamcleers teaches of a method for multiplexing and transmitting a signaling message and/or supplementary data with a voice signal to be transmitted to a mobile station in a mobile communication system, but does not disclose the steps of

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requesting that the media gateway reduces its transmission rate during a predetermined period of time; and receiving a response to transmission-rate reduction from the media gateway and transmitting the voice signal and the signaling message and/or the supplementary data to the mobile station by multiplexing the signaling message and/or the supplementary data with the voice signal according to a reduced transmission rate or a transmission-rate reduction request for a predetermined period of time is recorded in a reverse frame message.

19. Coa teaches the steps of requesting that the media gateway reduces its transmission rate during a predetermined period of time; and receiving a response to transmission-rate reduction from the media gateway and transmitting the voice signal and the signaling message and/or the supplementary data to the mobile station by multiplexing the signaling message and/or the supplementary data with the voice signal according to a reduced transmission rate or a transmission-rate reduction request for a predetermined period of time is recorded in a reverse frame message. (1: [0004] regarding requesting that the media gateway reduces its transmission rate during a predetermined period of time read [i]n the prior art, digital circuit networks are used to interconnect base stations. Frame selectors and vocoders are frequently co-located. A signal multiplexer is used to optionally combine voice packets and signaling packets into combined frames. .. to reduce the delay of transmitting signaling information, a command is sent to the vocoder producing voice packets to limit the voice packets to half rate or less packets. Figure 2; 2: [0012] in regards to receiving a response to transmission-rate reduction from the media gateway read [i]n the quiescent state of the multiplexer, the multiplexer is waiting for a signal, i.e., a signaling message. 1: [0016] with regards to reduced transmission rate or a transmission-rate reduction request for a predetermined period of time is recorded in a reverse frame message read Action block 223 can be executed in one of two ways: the count can start following the result of test 221).

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20. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the voice/signaling message multiplexing teachings of Hameleers with the delayed blank and burst teachings of Coa.

21. In this manner signaling data and voice data can be transmitted to a mobile station in an optimal fashion.

22. With regards to claims 6, 11, 16, and 24, Hameleers teaches the reverse frame message is transmitted through an interface for transmitting data frames of the voice signal, and includes a reverse layer-3 data information which includes an information element for a reduction request and/or an information element for time for transmission-rate reduction time. (3: [0025]+ read the cellular telephone network 1 is divided into a first layer 3 or level, also called an application or signaling information processing and transferring platform, comprising application and network service functions.)

23. Claims 7 – 8 and 12 – 13, 17 – 18, and 25 – 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hameleers, et al (U.S. Patent 6760325), hereafter Hameleers, in view of in view of Cao et al (U.S. Patent Application 20040141475) hereafter Cao in further view of Applicant's admitted prior art.

24. In regards to claims 7 – 8 and 12 – 13, 17 – 18, 25 – 26, Hameleers modified by Cao teaches the limitations of claim 5, but fails to disclose a second interface established separately from a first interface through which data frames of the voice signal are transmitted.

25. Applicant teaches as admitted prior art of a second interface established separately from a first interface through which data frames of the voice signal are transmitted. (1: [0008] read [a]n A1 interface and user information A2/A5 interfaces used for only circuit data are established between the mobile switching center and the base station controller 21. Also, an A3 interface is defined as an interface which enables simultaneous transmission of a control signal and user data between the base station controller

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and another base station in selection of a reverse frame and transmission of a forward frame between them during soft handover.).

26. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the voice/signaling message multiplexing teachings of Hamelcers and Coa with second interface teachings of Applicant.

27. In this manner transmission-rate reduction request messages can be transmitted with interfaces in compliance of CDMA2000 1x standards.

FINAL ACTION

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

29. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Baron whose telephone number is (571) 270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

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31. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

32. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./
Examiner, Art Unit 2616

HB
/Brenda Pham/
Primary Examiner, Art Unit 2616